
Hymenocallis (Amaryllidaceae) in Texas, with a New Varietal Combination

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ABSTRACT. A review of the taxonomy of *Hymenocallis* in Texas since the publication of names by Lloyd H. Shinnars is presented. The new varietal combination *H. occidentalis* (J. Le Conte) Kunth var. *eulae* (Shinnars) G. Lom. Smith & Flory is made, recognizing leaf and cytological differences. A short key is provided to distinguish between the varieties.

Key words: Amaryllidaceae, *Hymenocallis*, North America, Texas, U.S.A.

Shinnars (1951) recognized two species of *Hymenocallis* in Texas. He determined that the early-spring-blooming spider-lilies in east Texan wetlands represent the same species that Rafinesque (1817) described from Louisiana as *Pancratium liriosme*. Shinnars transferred the species to *Hymenocallis* on the basis of its green, fleshy seeds, establishing *H. liriosme* (Rafinesque) Shinnars. He further discussed the possibility that *H. galvestonensis* (Herbert) Baker is a synonym of *H. liriosme*, based on morphological similarities. Shinnars also described a mid- to late-summer-blooming spider-lily, scattered in sandy, piney woods or in heavy soils near streams of east Texas as *H. eulae*. This epithet honored Eula Whitehouse, then a Technical Assistant in the herbarium of Southern Methodist University and artist-author of *Texas Flowers in Natural Colors* (Whitehouse, 1936). Correll and Johnston (1970) followed Shinnars's taxonomy, as did Correll and Correll (1972), but they treated the more robust spring-blooming populations in inland counties of east Texas as *Hymenocallis caroliniana* (L.) Herbert.

Howard (1995) presented controversy with his determination that *Hymenocallis galvestonensis* (Herbert) Baker is the same species as *H. eulae* Shinnars. His stated rationale was that the type collection (no date given) has no leaves. It is true that at the time of flowering, in mid summer, the leaves

of *H. eulae* have senesced. However, we are convinced, for three reasons, that *H. galvestonensis*, originally described under *Choretis* by Herbert (1837), based on *Drummond 412* and later transferred to *Hymenocallis* by Baker (1888), is the same as *H. liriosme* (Rafinesque) Shinnars. This species does not correspond to *H. eulae*.

First, the illustration (plate 41, fig. 34) accompanying Herbert's (1837) original description of *Choretis galvestonensis*, based on *Drummond 412*, shows an inflorescence that is a clear match for *Hymenocallis liriosme*. The staminal cup, perianth segments, free filaments, anthers, perianth tubes, and scape bracts, in both shape and dimension, represent the floral architecture of *H. liriosme*. In that species, the perianth segments, the tepal tubes, and the free filaments are decidedly shorter than those in *H. eulae*; the staminal cup has a prominent yellowish green eye and its margin is coarsely dentate to wavy. For *Hymenocallis eulae*, the staminal cup has a faint yellowish green eye and its margin is sharply dentate to lacerate. Moreover, in *Hymenocallis liriosme* the scape bracts are not distally long-acuminate but are so in *H. eulae*.

Second, Smith, during a week at MO in August 1992, made detailed measurements of over a thousand specimens of *Hymenocallis*, including the MO collection that incorporates the Traub specimens, many on loan from K and BM as well as American herbaria including SMU (now BRIT). Among the K and BM loans were specimens of *Drummond 412*, which without doubt correspond to *H. liriosme*.

Third, Herbert's type for *Choretis galvestonensis*, *Drummond 412*, was collected near Galveston Bay. Its numerous wetlands offer a prime habitat for *Hymenocallis liriosme*, and all other collections of *Hymenocallis* from Galveston County that have been examined are of *H. liriosme*. None are of *H. eulae*.

Certainly, it is puzzling that *Drummond 412* has

no leaves, as would be expected for *Hymenocallis liriosme* in bloom. Several reasons may be hypothesized for this situation. Drummond may have collected only the flowering scapes, or he may have made separate collections of the scapes and of the bulbs and leaves, which collectors frequently do with *Hymenocallis*, but for some reason, the bulbs and leaves were not associated with the scapes in his 412 collection. Alternatively, one can decide, as did Howard (1995), that *Drummond 412* is actually *H. eulae*.

Based upon examination of herbarium specimens and field observations, we consider *Hymenocallis eulae* to be similar to *H. occidentalis* (J. Le Conte) Kunth of eastern states. It was troublesome to the authors that *H. eulae* is documented by only a meager number of herbarium specimens, but from examination of them and careful measurements taken from them, we conclude that no significant floral differences exist between these species. However, obvious differences do occur in leaves. It has been observed and reported in the literature that the leaves of *H. eulae* wither before anthesis (Correll & Johnston, 1970; Correll & Correll, 1972) and are suberect before withering (Howard, 1995). The leaves of *H. occidentalis* are present and arching to nearly prostrate at anthesis. The plants of *Hymenocallis eulae* clump, forming dense flowering clusters (Flory, 1976; Howard, 1995), whereas the plants of eastern *H. occidentalis* occur singly or only loosely clumped.

Cytological information also supports an affinity between *H. eulae* and *H. occidentalis*. Flory (1976) reported the chromosome number of *Hymenocallis occidentalis* as $2n = 54$, with 38 two-armed and 16 telocentric chromosomes, and the number of *Hymenocallis eulae* as $2n = 52$, with 40 two-armed and 12 telocentric chromosomes. Although the numbers of chromosomes are different, the total number of chromosome arms is the same, both 92, and this suggests a genetic correspondence between the two numbers (Flory & Schmidhauser, 1957; Flory, 1976).

Based on information from morphology, distribution, and cytology, we submerge *Hymenocallis eulae* as a variety within *H. occidentalis* in our treatment for *Flora of North America*.

Hymenocallis occidentalis (J. Le Conte) Kunth, Enum. Pl. 5: 856. 1850. *Pancratium occidentale* J. Le Conte, Ann. Lyceum Nat. Hist. New York 3: 146. 1836. TYPE: U.S.A. western Georgia, Collector(s) and number unknown (holotype, PH not seen).

Hymenocallis bidentata Small, Manual of the Southeastern Flora. 323. 1933. TYPE: U.S.A. Alabama: St. Bernard, Oct. 1920, *Bede Knapke s.n.* (holotype, NY not seen).

Hymenocallis moldenkiana Traub, Pl. Life 18: 71. no. 21. 1962. TYPE: U.S.A. Georgia: Appling Co., from bulbs collected by Mary G. Henry (T-223) (holotype, MO 272a and b).

Bulb non-rhizomatous, globose, $3.5\text{--}5.5 \times 3\text{--}4.5$ cm, neck 1.5–4 cm, basal plate 1–3 cm long; tunic dark brown. *Leaves* 5 to 12, arching to suberect, oblanceolate, shallowly channeled, $3.5\text{--}6$ dm \times 2–6 cm, non-coriaceous, tapering to a petiole-like state, glaucous when young, apex acute. *Scape* (4–) 5–7 dm, two-edged, glaucous; 2 lanceolate scape bracts enclosing the buds, distally long-acuminate, $4\text{--}7$ cm \times 10–15 mm; each flower with a subtending narrowly lanceolate bracteole, $2.5\text{--}4.5$ cm \times 5–10 mm. *Flowers* 3 to 9, opening sequentially with a heavy sweet fragrance; perianth segments slightly ascending, white, green-striped on keel, (7–)8.5–11.5 cm \times 5–10 mm; perianth tube green, slender, 7–13.5 cm long; staminal cup white with small, faint yellow-green eye, funnelform, shortly tubulose below, $2.5\text{--}4(4.5)$ \times 4–5.5 cm, margin often irregularly tridentate between the free filaments; free filaments nearly erect, inserting at a flat sinistral base, white, 2.5–4 cm; anthers 1.3–2 cm, pollen golden; style green in distal third but fading into white proximally, 13–23 cm; ovary ovoid, $0.8\text{--}1.5$ cm \times 4–7 mm; ovules 2–3 per locule. *Fruit* broadly trigonous to subglobose, ca. 2.5×2 cm. *Seeds* subcircular, $1.5\text{--}2.1 \times 1.2\text{--}1.6$ cm. $2n = 52$ or 54.

The type variety of *Hymenocallis occidentalis* (Fig. 1) is distinguished by leaves up to 6 cm wide, appearing in late winter and dying off after anthesis; scape bracts 4.5 to 7 cm long. $2n = 54$. Woodland or northern spider-lily.

Phenology. Flowering summer–early fall.

Distribution. Floodplain forests, hammocks, meadows, wooded hillsides, 27–1075 m; southeastern U.S.A. from Louisiana through the Cumberland Plateau to western Carolinas, northwest to Illinois and Indiana and south to western Georgia to the northern panhandle of Florida.

Hymenocallis occidentalis (J. Le Conte) Kunth var. ***eulae*** (Shinners) G. Lom. Smith & Flory, comb. et stat. nov. Basionym: *Hymenocallis eulae* Shinners, Field & Lab. 19: 102–104. 1951. TYPE: U.S.A. Texas: Van Zandt Co., N of Edgewood near Ocean Lake cultivated at J. A. Whitehouse having been introduced from wild plants on Sabine River, 6 Sep. 1946, *Eula Whitehouse 16448* (holotype, BRIT; isotype, MO).

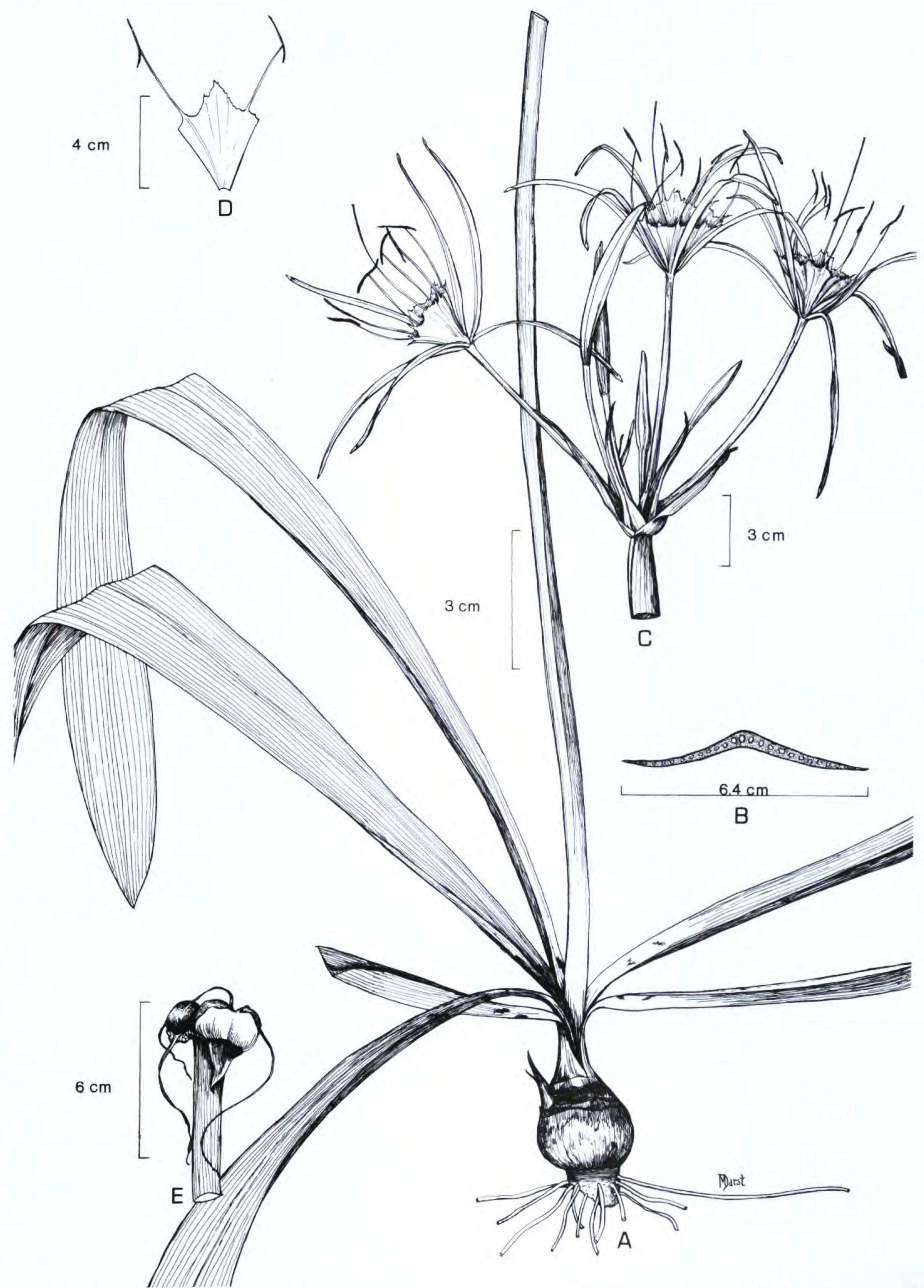


Figure 1. *Hymenocallis occidentalis* var. *occidentalis*.—A. Habit. —B. Leaf cross section. —C. Inflorescence. —D. Section of staminal cup. —E. Dehiscent capsule. Drawn by Melanie Darst from *Smith, Godfrey, Garland & Moretz 1553* (Florida, Liberty Co.: bluffs of Torreya State Park, 2 July 1991).

